

Anaconda
SHEET COPPER
FOR BUILDING CONSTRUCTION



THE AMERICAN BRASS COMPANY

General Offices, Waterbury 88, Connecticut

Subsidiary of Anaconda Copper Mining Company • District Offices in Principal Cities

Anaconda

SHEET COPPER FOR BUILDING CONSTRUCTION

FOR centuries copper has been the roofing material of ultimate quality, has adorned monumental buildings and endured functionally for hundreds of years. Because of the attractive green patina

which forms on copper in most locations, no other material will so enhance in beauty with age. Copper combines the qualities of stateliness and charm, warmth and dignity, with unparalleled service life.

The American Brass Company produces sheet copper in all standard sizes, weights and tempers for roofing, flashing, valleys, hanging and built-in gutters, leaderheads and leaders, etc., as well as specially developed products such as Economy Copper Roofing, "Electro-Sheet" Copper and Anaconda Through-Wall Flashing.

DIMENSIONS AND WEIGHTS OF ANACONDA SHEET COPPER

Soft or Cold Rolled Standard Roofing Sheets				Anaconda Economy Copper Roofing			
Weight Ounces Per Sq. Ft.	Width Inches	Length Inches	Estimated Pounds Per Sheet	Weight Ounces Per Sq. Ft.	Width Inches	Length Inches	Estimated Pounds Per Square
14	24, 30 & 36	96	14, 17½ & 21	10	16	72	80
16	24, 30 & 36	96	16, 20 & 24	Anaconda Through-Wall Flashing and Through-Wall Corner Flashing See Pages 6 and 7 for dimensions.			
16	24, 30 & 36	120	20, 25 & 30				
18	24, 30 & 36	96	18, 22½ & 27	Anaconda Stamped Spandrel Beam Flashing			
20	24, 30 & 36	96	20, 25 & 30				
24	24, 30 & 36	96	24, 30 & 36	Weight Ounces Per Sq. Ft.	Width Inches	Length Feet	
32	24, 30 & 36	96	32, 40 & 48	10	8¼" x 24¼"	5 or 8	
Soft or Cold Rolled Strip Copper				Anaconda Flashing Reglets			5
14	20	96	11⅔	Weight Ounces Per Sq. Ft.	Size When Formed	Random Lengths	
16	*10	96	6⅔	24	¾" x 1¾"	4 to 12 ft.	
16	*12	96	8	Anaconda "Electro-Sheet" Copper			
16	*14 & *15	96	9⅓ & 10	Weight Ounces Per Sq. Ft.	Width Inches	Length	
16	20	96	13⅓	1, 2 & 3	30, 60, 61, 62 & 64†	Unlimited	
16	20	120	16⅔	†Untrimmed.			
18	20	96	15				
20	20	96	16⅔				
24	20	96	20				
32	20	96	26⅔				
Soft Copper in Rolls							
	6, 7 & 8		80, 90, 100				
	10 & 12	Varying	lb. approx.				
16	14 & 16	Lengths	per roll.				
	18 & 20						

*Cold Rolled only.

LABORATORY tests and studies in the construction field have developed the conclusion that cold rolled, light tempered sheet copper, commonly known as cornice temper copper, is the highest quality, most satisfactory material for copper roofing of all types.

Cornice temper copper, with greater stiffness and higher yield strength, is better able to distribute stresses induced by contraction and expansion caused by temperature changes, and to eliminate sharp local buckling which frequently results in fatigue failure. The stiffer sheets also slide more readily in expansion joints and other mechanical devices used to absorb contraction and expansion.

CORNICE TEMPER SHEET COPPER

**Recommended as Most
Satisfactory Roofing Sheet**

Selection of Weights

Studies of copper roofing sheets developed another important element in obtaining the most satisfactory installation, and that is proper selection of weight or thickness for design and area of installation. The following tables suggest suitable weights of copper for various types of roofing. On page 4 is a chart showing relation of weights of copper to dimensions of box or built-in gutters.

ROOF PANS FOR STANDING SEAM COPPER ROOFS			ROOFING SQUARES FOR FLAT LOCK SEAM COPPER ROOFING		
Stock Size	Gage Weight	Max. Flat Width Between Standing Seams	Stock Size	Gage Weight	Size of Squares
16" x 72"	10 Oz.	13 $\frac{3}{4}$ "	30" x 96"	16 Oz.	12" x 15"
20" x 96"	14 Oz.	17 $\frac{3}{4}$ "	28" x 96"	18 Oz.	14" x 16"
24" x 96"	16 Oz.	21 $\frac{1}{4}$ "	36" x 96"	20 Oz.	16" x 18"
28" x 96"	20 Oz.	25 $\frac{1}{4}$ "	36" x 96"	24 Oz.	18" x 24"
32" x 96"	24 Oz.	29 $\frac{1}{4}$ "	36" x 96"	32 Oz.	24" x 36"
			30" x 96"	40 Oz.	30" x 60"
			36" x 96"	48 Oz.	36" x 96"

It has been demonstrated by tests and by practice that built-in or box gutters made from cold rolled, cornice temper sheet copper, if properly installed, will serve for many years without maintenance expense.

The gage of the metal should be proportional to the scale of the work beginning with a minimum of 16 ounces to the square foot. The chart on page 4 suggests a relationship between the width of the

SHEET COPPER FOR BUILT-IN GUTTERS

gutter, the length of the gutter between downspouts, and the gage of the copper. In wide gutters the heavier gages increase stiffness and thus reduce local buckling tendencies.

EXPANSION JOINTS

The expansion joint is one of the most important elements in the life of the gutter and special care should be exercised in its construction. The joints should be built in the gutter midway between all downspouts, and solder should be carefully applied so that it will not interfere in any way with a joint's ability to compensate for contraction and expansion.

In effect this joint is made by cutting the gutter in two and building a header into the end of each half, allowing a suitable clearance between headers for expansion and making the joint weather-tight with a sleeve type joint cover.

The headers are channel-shaped pieces of copper fastened to the gutter at its outline by means of

simple soldered lap seam joints. The outstanding flanges at the tops of the headers must be wide enough to keep the joint cover engaged through extremes in temperature. At least a one inch space should be left between the headers for expansion, and increased at a rate of two inches per hundred feet distance between downspouts.

The function of the joint cover is to keep the space between the gutter ends dry under all weather conditions. This requires a loose lock of generous size to allow the necessary movement of the gutter but still so proportioned as to keep the flanges engaged and unaffected by the force of the wind.

Many otherwise perfect expansion joints are spoiled by soldering either the gutter-end flanges or the joint cover to the gutters, thereby nullifying the expansion joint.

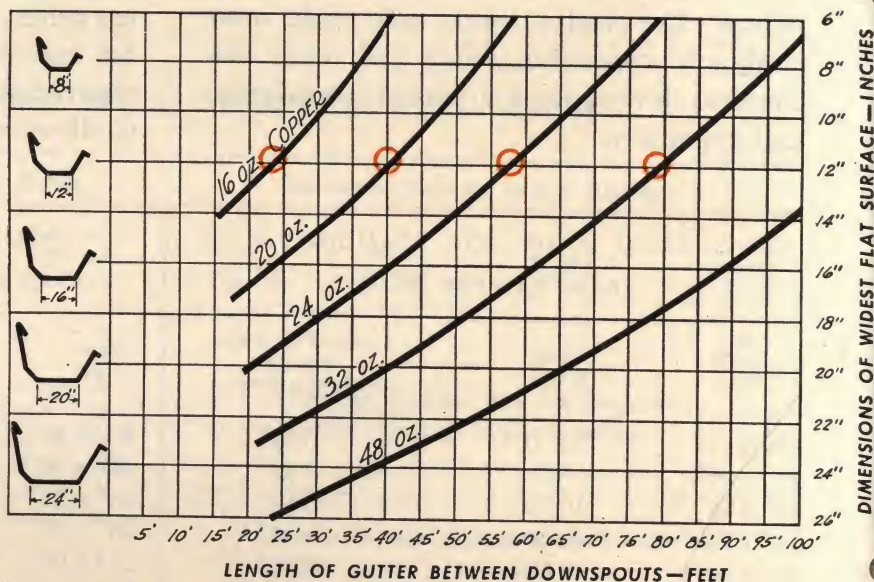
SUGGESTED RELATIONSHIP

size and weight of Built-In
Copper Gutters

○ Example of 12" gutter showing permissible increase in distance between downspouts in relation to the increase in thickness of copper.

SIZE OF
GUTTERS

USE COLD ROLLED COPPER—CORNICE TEMPER



Locate an Expansion Joint Midway Between all Downspouts

10-OUNCE ECONOMY* COPPER ROOFING

FOR SMALL AND MEDIUM-SIZED HOUSES
AND INDUSTRIAL SAW-TOOTH ROOFS

The American Brass Company developed Anaconda 10-Ounce Economy Copper Roofing to provide a copper roof within design and cost limita-

* Reg. U.S. Pat. Off.

tions for small and medium-sized houses. Supplied in sheets weighing 10 ounces to the square foot and 16 inches wide, this material is applied by the standing seam method in panels approximately 13¾ inches wide. These narrow panels provide the same strength, rigidity and wind resistance obtained with thicker sheets and wider seam spacing, with equal advantages of extreme durability, water-tightness and protection from fire.

These narrow, 10-ounce sheets have also been

economically and satisfactorily applied to industrial roofs of saw-tooth construction. The use of the lighter metal, which is more easy to form and apply than the customary 16-ounce or heavier

sheets, brought installation costs much lower than those of heavier copper roofs. The same mechanical principles which made this roof so satisfactory for home roofing apply to the factory roof.

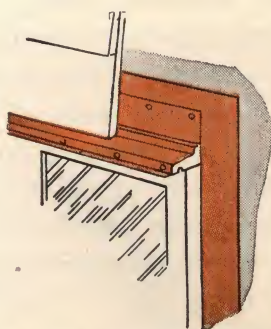
Anaconda "Electro-Sheet" Copper, made in wide, thin sheets of unlimited length by electrolytic deposition, provides the positive and durable protection of copper at low cost. It is rust-proof, vermin-proof, non-porous, non-inflammable and impervious to penetration by water, air or moisture.

For most building purposes Anaconda "Electro-Sheet" Copper is supplied laminated with high grade building papers, fabrics or asphaltic compounds. When so laminated, it is extremely flexible and easy to install. This special copper sheet is made in thicknesses of .0013", .0027" and .004" (1 oz., 2 oz. and 3 oz. in weight per square foot), in standard widths of 30", 60", 62" trimmed, and 64" untrimmed. One side has a commercially bright finish.

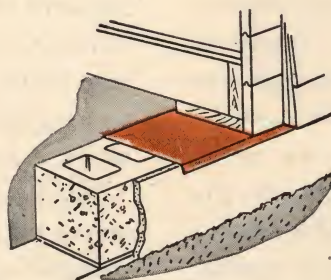
APPLICATIONS

Laminated "Electro-Sheet" has provided economical solution to many varied problems of water, moisture, vapor and wind proofing. It is also used for shielding in buildings housing sensitive electrical equipment. Following are a number of the more common of its many applications:

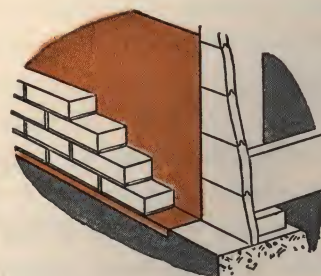
Door and Window Flashing—A positive and lasting seal around door and window casings.



DOOR AND WINDOW FLASHING



DAMP-PROOFING



WEATHERPROOFING

Anaconda

"ELECTRO-SHEET" COPPER

Spandrel Beam Flashing—Is used for this purpose in all types of building construction.

Damp-Proofing—Layers of "Electro-Sheet" applied with pitch, asphalt or other mastic over footings, the outside of foundations and between sub and finished floors in basements are effective protection against water or moisture entering the cellar. "Electro-Sheet" is also laid under cellarless houses, mopped down with roofing pitch, and as a foundation damp course to protect wood sills and framing.

Weatherproofing—Laminated "Electro-Sheet" applied to the sheathing of masonry veneered houses in place of building paper forms an impenetrable barrier to the weather.

Heat Sealing—Laid with furring strips under attic floor joists to prevent escape of heat, or tacked to floor joists in the case of unfinished attics.

Vapor Seal—Applied over studs and joists after insulating material is in place to protect insulation from condensation of water vapor within the walls of the house.

Ridge Flashing—Used to flash ridge poles on all types of shingled roofs.

Anaconda

THROUGH-WALL FLASHING

Anaconda Through-Wall Flashing is efficient, positive and durable, yet relatively inexpensive. It is readily adaptable to practically every masonry condition. The principal feature of its design consists of a series of zig-zag ridges $7/32$ " high intersected at one end by a $7/32$ " longitudinal ridge which acts as a dam, causing any accumulation of water to flow to the opposite face of the wall.

The zig-zag ridges prevent lateral movement in any direction. *The possibility of vertical movement may be disregarded* as a properly designed masonry wall has its mass and weight so proportioned in relation to wind and other forces that uplift does not occur under any normal condition except as a result of heaving by frost which, if of sufficient force to cause vertical movement of the wall or coping, would be sufficient to break the bond between masonry, mortar and flashing of any design. Actually, Anaconda Through-Wall Flashing assures minimum risk of heaving by frost as it is so designed that it will drain itself dry on a level bed.

This flashing, available in a variety of types and sizes as shown in the sketches on page 7, is made of 16-ounce Anaconda Copper.

All standard types of Through-Wall Flashing for 8" and 12" walls are carried in stock in eight-foot lengths. Special Anaconda Through-Wall Flashing is available on order in over-all widths up to and including 47", with the corrugated area any width in multiples of 2", from $8\frac{1}{4}$ " up to and including $36\frac{1}{4}$ ", and the flat selvage on the dam side any width up to 4". If open end corrugations without drain selvage are acceptable, the corrugated area of these special flashings may be obtained in any width up to $36\frac{1}{4}$ " without the restriction of being in 2" multiples. These special flashings are also furnished in eight-foot lengths.

Because it can be bent and cut to fit on the job, Anaconda Through-Wall Flashing can be installed easily and quickly, with a minimum of delay to bricklayers and masons. Tight end joints can be made by overlapping one or two corrugations. When specified, solder is easily applied to the flat ends of the strips.

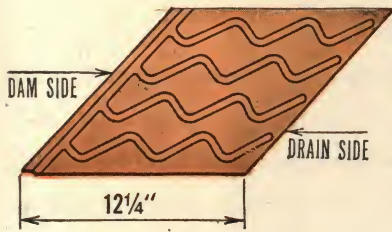
WHERE THROUGH-WALL FLASHING IS USED

Through-wall flashing should be installed under copings and at the base of parapet walls. It is important also that it be installed in the side walls at frequent vertical intervals—preferably at every floor, and at all openings such as door and window-heads and sills.

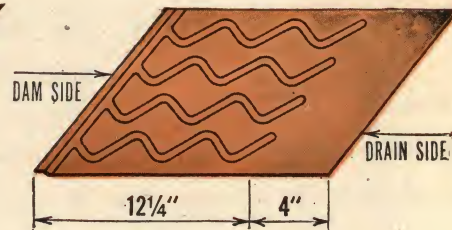
It is above the roof line that the greatest danger is incurred. There, with both faces exposed to the weather, either side of the wall is subjected to driving rain while, on the other side, the partial vacuum which is always present in the lee of a wind-break, exerts a powerful suction which aids the natural capillarity of the masonry in absorbing water. Meanwhile, water flowing through the joints of the coping is drawn into the masonry by gravity. The water thus accumulated gradually seeps downward and inward until the saturation point of the masonry is reached; then it flows off both faces of the wall, to the detriment of the supporting structure, plaster and decorations on the inside and disfiguring the appearance of the outside by precipitating a deposit of mineral salts on the masonry.

Through-wall flashing installed under the coping and at the base of the parapet intercepts this accumulation and diverts it to the roof or outside face of the wall as desired.

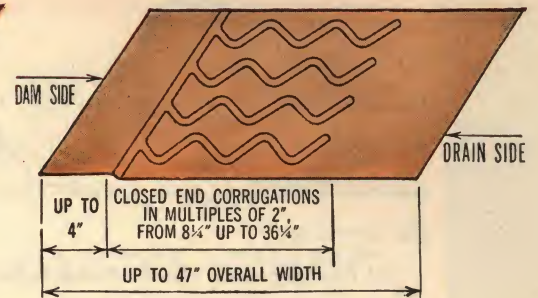
SPECIMENS OF STANDARD AND SPECIAL FLASHINGS



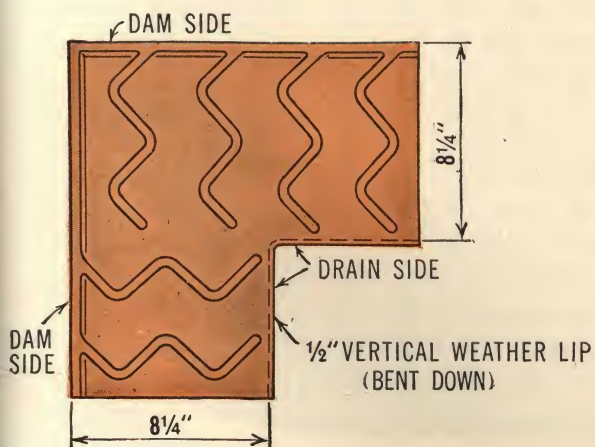
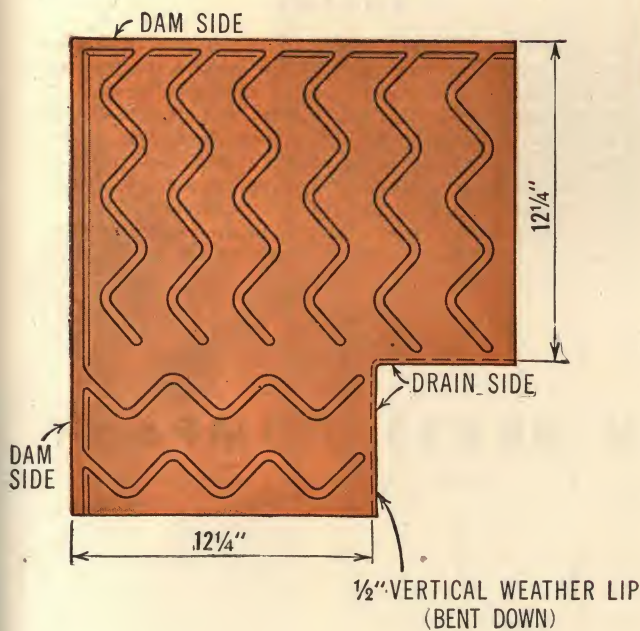
TYPE A-12 STANDARD
FLASHING FOR 12" WALL



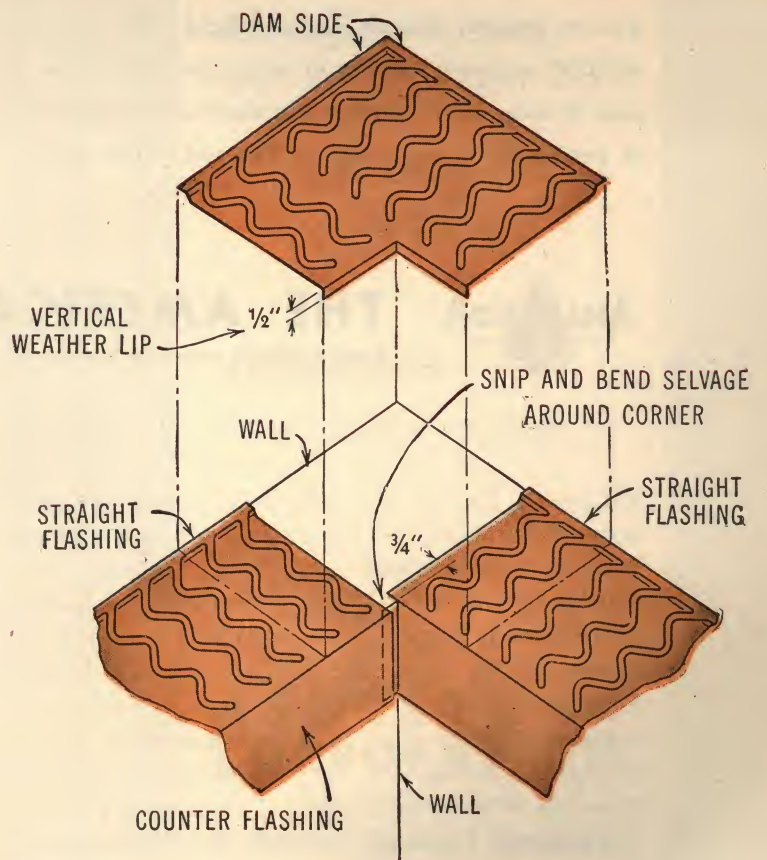
TYPE B-12 STANDARD
FLASHING FOR 12" WALL



OUTSIDE CORNER FLASHING DAM ON OUTSIDE, DRAINS IN



STANDARD ONE-PIECE CORNER FLASHING



ASSEMBLY OF OUTSIDE CORNER FLASHING

SUGGESTED SPECIFICATIONS FOR ANACONDA THROUGH-WALL FLASHING

Provide and install Through-Wall Flashing under all parapet copings and for through flashing and counter flashing at roof and elsewhere as shown on the drawings.

All flashing shall be of 16-ounce copper and shall be Anaconda Through-Wall Flashing as manufactured by The American Brass Company, specially formed to mechanically bond in the mortar bed in order to prevent lateral movement in all directions. The mechanical bonding features shall occur at intervals of not more than 3 inches and shall be a series of ribs extending irregularly and transversely of the sheet, one end of which shall join an integral dam at its full height. The metal shall be so formed as not to cause any accumulation of water on the surface and shall not be broken or perforated in any manner. The end joints shall

be so lapped and locked that water will not leak through. The flashing at the corners shall consist of one-piece units of the same design.

HOW TO ORDER

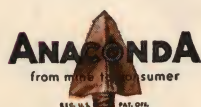
When ordering Standard Flashings, specify the Type and width of flashing by number, i.e., A-8, B-12, etc. When ordering Special Flashings specify the width of corrugation and the width of selvage on both the dam side and the drain side.

Anaconda Flashings are made of 16-ounce copper weighing approximately one pound per square foot, and are furnished in eight-foot lengths. The overlap factor for overlap and waste is usually taken at approximately five percent.

NOTICE

The statements and data contained in this publication are based on extensive investigation and practical experience and represent the best information available at time of printing, June, 1948. This information is subject to change at any time principally because of new developments and changes in practice. Since the company does not control or supervise subsequent installation of its products, it cannot assume responsibility for performance in service.

Our Engineering Department will gladly cooperate in the solution of individual problems involving the use of Anaconda Building Products.



THE AMERICAN BRASS COMPANY

General Offices: Waterbury 88, Connecticut

Subsidiary of Anaconda Copper Mining Company

DISTRICT OFFICES

ATLANTA 3, GA.	66 Luckie Street
BOSTON 10, MASS.	140 Federal Street
BUFFALO 5, NEW YORK	70 Sayre Street
CHICAGO 7, ILL.	1326 West Washington Blvd.
CINCINNATI 2, OHIO	101 West Fourth Street
CLEVELAND 14, OHIO	2906 Chester Avenue
DENVER 2, COLO.	818 Seventeenth Street
DETROIT 31, MICH.	174 South Clark Avenue
HOUSTON 2, TEXAS	1605 Commerce Building
KENOSHA, WIS.	1420 Sixty-Third Street
LOS ANGELES 13, CALIF.	601 West Fifth Street
MIAMI 32, FLA.	139 N.E. First Street
MILWAUKEE 4, WIS.	1033 West Bruce Street

MINNEAPOLIS 2, MINN.	527 Marquette Avenue
NEWARK 2, N. J.	744 Broad Street
NEW YORK 4, N. Y.	25 Broadway
PHILADELPHIA 22, PA.	111 West Norris Street
PITTSBURGH 12, PA.	1228 Brighton Road
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ROCHESTER 4, N. Y.	183 Main Street, East
ST. LOUIS 2, MO.	408 Pine Street
SAN FRANCISCO 4, CALIF.	235 Montgomery Street
SEATTLE 1, WASH.	1338 Fourth Avenue
SYRACUSE 2, N. Y.	507 State Tower Building
WASHINGTON 5, D. C.	1511 K Street, N. W.
WATERBURY 88, CONN.	414 Meadow Street

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